The Technology Transfer Pyramid and How to Climb It

By

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[The following is an excerpt from *The Export Bulletin*, published by Northrop Grumman International, Export Management Department, from the July 2000 edition.]

International business accounts for a substantial and growing portion of Northrop Grumman's overall revenues. Many of our company's international initiatives tend to involve the higher end of the technology spectrum, as demonstrated by programs such as Directional Infrared Counter Measures (U.K.), and Wedgetail (Australia). During the past decade the importance of technology transfer as a key discriminator for winning international programs has become increasingly significant. Major international programs initiated during the period 2000-2010 are expected to focus largely on the sale and/or joint design and development of non-U.S. inventory end items, including software. Such programs will involve significant levels and amounts of U.S. technology transfer together with increasing use of high-end foreign technologies in products designed for use by U.S. as well as foreign forces. Accordingly:

> Our ability to obtain the export licenses and other authorizations necessary to support required levels of technology transfer in major international programs is a dey determinant of Northrop Grumman's ability to compete effectively in the global marketplace.

All major international programs involve a range of information and know-how applicable to each of the elements of hardware and software included in the program. These may be illustrated by a pyramid based upon an ascending degree of sensitivity, as follows:

To successfully "climb" the technology pyramid requires a thorough understanding of the complex interrelationships between each of the depicted categories and the program's hardware and software elements, along with a sound comprehension of applicable U.S. government releasability policies and guidelines.

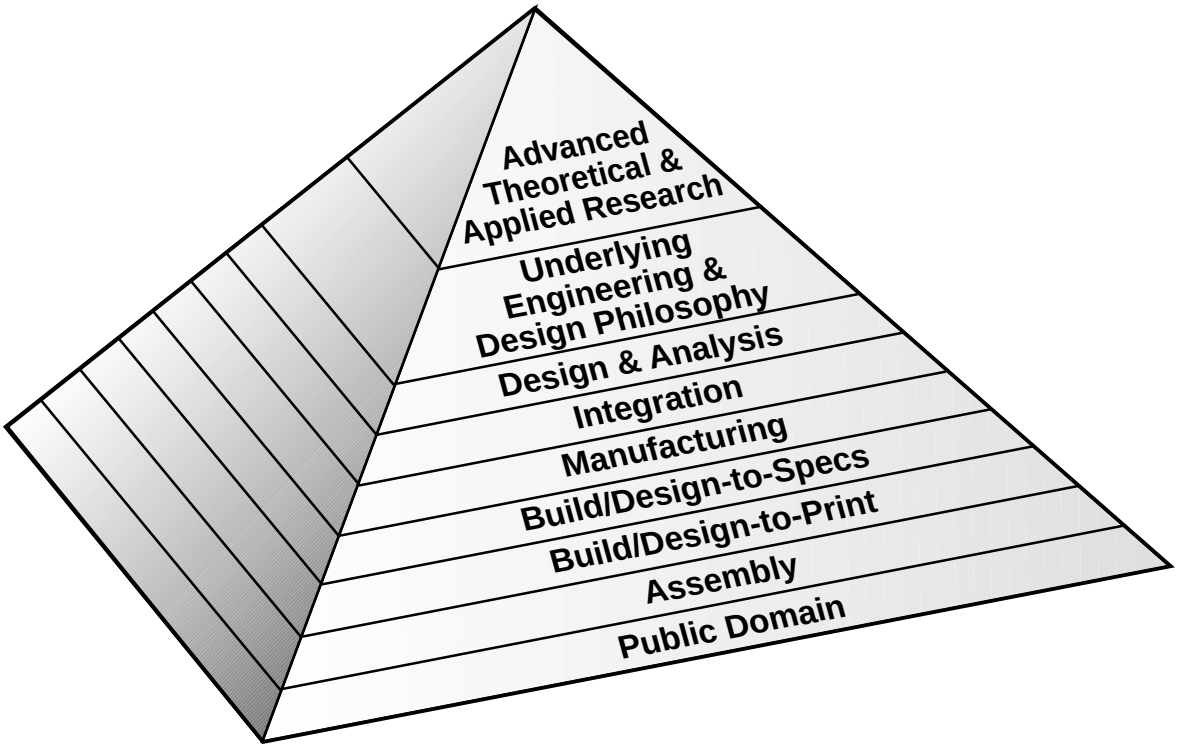
In climbing the technology pyramid adherence to the following principles will result in:

- Faster processing
- Fewer limitations and provisos
- Avoidance of returns without action or outright denials:

Principle #1: Divide the technology into portions appropriate to program phases.

For example, release of sensitive classified information during a program's marketing phase normally will not be supported by DoD. Following source selection, technology transfer may be accelerated to an extent consistent with several factors, including the recipient country's degree

of program commitment, its status as friend or ally of the United States, and its capability and willingness to provide necessary protection against technology diversion.



Principle #2: Break up the technology flow in a manner designed to protect those elements of greatest concern to the U.S. government.

For example, weapons systems can be broken down into assemblies, sub-assemblies, components, parts, etc. In proceeding along this descending order of aggregation items may be segregated according to their sensitivity/releasability. Those deemed less sensitive (based on proprietary and/or national security considerations) may be appropriate candidates for a suitable level of technology transfer. Clearly state in applications what is being proposed for transfer and what is not.

Principle #3: Anticipate U.S. government limitations and provisos and pre-empt them.

How? By providing clear and compelling justification. Note that the ability to do so presupposes thorough and accurate knowledge of U.S. government perceptions of technology sensitivities, as reflected in the Militarily Critical Technologies List (MCTL) and system-specific releaseability guidelines.

Principle #4: Prepare a quality license/agreement application.

Explain clearly what you intend to do and with whom you wish to do it.

Explain why you wish to do it (benefits to the United States, e.g., interoperability, supports NATO DCI, supports Joint Vision 2020 objectives; benefits to the customer, e.g., interoperability,

enhanced capability, R&M improvements; benefits to Northrop Grumman, e.g., technology acquisition, jobs, income).

Avoid vague language (leads to question: What are they trying to hide?)

Make the application as reviewer-friendly as possible by avoiding unexplained acronyms and use of poor grammar.

Provide all information required by the ITAR.

Consider up front the need for an exception to the National Disclosure Policy.

Consider up front the need for Congressional notification (required for all programs involving foreign manufacture of Significant Military Equipment; also must consider dollar value thresholds applicable to Major Defense Equipment and all other defense articles and defense services).

Pre-brief U.S. government officials responsible for reviewing application for export authorization.

Prepare, as necessary, a Technology Control Plan and a Technology Transfer Control Plan, and discuss them with ODTC and DTRA, respectively.

About the Author

Charles G. Jameson is the Corporate Director of Export Management for Northrop Grumman Corporation, located in the Company's Washington Office.

Prior to his employment by Northrop Grumman in 1997, Jameson served in the Defense Security Cooperation Agency's Weapons Systems Division as Manager, Technology Programs, IMET Program Coordinator, and Country Director for numerous countries in the Far East and Latin America regions. From 1972-1975, he served as an assistant director of the U.S. military assistance program and also participated in managing the Military Assistance Service Funded program for the Republic of Vietnam.Other major projects Mr. Jameson was responsible for managing during his tenure at DSCA included military support for Cambodia's armed forces and friendly forces in Vietnam, several major coproduction programs, emergency support for Israel during the 1973 war, and the Japanese FS-X aircraft development program.

From 1968-1971, he served as a U.S. Navy officer aboard the USS Sacramento (AOE-1) during three deployments to Southeast Asia.

Mr. Jameson attended Cornell, Adelphi and Princeton Universities. His civilian awards included the Secretary of Defense Medal for Meritorious Civilian Service and the Republic of Korea's Order of National Security Merit.